

**Remarks/Arguments:**

Claims 1-28, 31 and 33-47 were pending at the time of the office action. All of the independent claims are amended herewith to incorporate the feature from claim 2 stating that the unperforated barrier layer is impermeable to gaseous water. All of the independent claims are also amended to incorporate the features of now-canceled claim 44, reciting specific compositions of the unperforated barrier layer. Several claims are also amended to provide proper antecedent basis. No new matter has been added.

**35 USC § 103**

Claims 1-10, 12-15, 20-24, 27, 28, 31, 34, 36, 41 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000). Applicants respectfully traverse the rejections for at least the following reasons.

With respect to previous claim 44, whose features are now incorporated into all of the independent claims, the office action at point 2 refers to Lin's disclosure at page 3, lines 35-32 (sic; 25-32) of a structure comprising one layer that has been perforated and one layer that has not been perforated. However, the office action errs in saying that Lin teaches (page 7, lines 17-32) that the unperforated layer comprises a polyester. The cited passage describes layers 10 and 20, as shown in Figure 1B. It does not describe the unperforated layer that Lin discusses at page 3, lines 25-32. That layer, which Lin refers to as his "sealing" layer, is a separate layer identified as layer 16 in Figure 4. Sealing layer 16 is optional<sup>1</sup>, and when present resides on top face 12 of polymer layer 10 in any of the films shown in Figures 2A, 2B and 2C.<sup>2</sup> But sealing layer 16 does not comprise a polymer selected from the group consisting of polyesters, copolyesterethers, copolyamideethers, polyamides, cellulosic plastics and polycaprolactone as recited in all of the independent claims. Sealing layer 16 must be a lipid, oleaginous material, wetting agent, surfactant, wax, fatty acid or derivative thereof, starch, or an amyloid material or derivative thereof.<sup>3</sup> (It is preferably paraffin wax, and preferably melts between 40°C and 110°C<sup>4</sup>.) Thus, Lin does not teach all of the layers recited in the independent claims and thus is deficient as a basis for *prima facie* obviousness. For at least this reason, the rejections of all claims should be withdrawn.

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<sup>1</sup> Lin, page 12, lines 23-24

<sup>2</sup> Lin, page 10, lines 24-29

<sup>3</sup> Lin, page 4, lines 19-22

<sup>4</sup> Lin page 12 lines 4-5

All of the pending claims also incorporate a feature found in previous claim 2, stating that the unperforated barrier layer is permeable to gaseous water. This feature, too, is not taught by Lin. The Office Action at point 3 notes that Lin describes his film as permeable to water vapor (gaseous water) when subjected to internal pressure, because the gaps in the perforated layer open up and allow air and vapor to escape. Lin refers to this action as similar to a pressure-releasing valve.<sup>5</sup> Lin also asserts that the heat of microwave cooking also causes the sealing material to thin, so that it becomes permeable,<sup>6</sup> although no further discussion of that mechanism is provided. Thus, by Lin's own description, the unperforated layer in his film is not permeable to gaseous water, in contrast with Applicants' claims. For this additional and separate reason, the rejections of all claims should be withdrawn.

Lin is also deficient by virtue of not teaching or suggesting the thickness, number, size or density of perforations or incisions recited in Applicants' claims. These deficiencies with respect to Applicants' invention flow naturally from the significant differences in Lin's objectives vs. Applicants'.

The underlying inventive concept of Lin is clearly very different from that of the present invention. Lin teaches that the invention therein operates *via* a type of pressure-release valve mechanism mediated by heat. In its normal state, the gaps in the **base layer** are filled with the material from the overlying "**sealing layer**" and are therefore closed, the composite film being air-impermeable. When the film is exposed to hot air, the seal between the sealing layer and the base layer is degraded, allowing air to pass between the layer interface, thereby ventilating the contents of food within the packaging (see for instance page 4, lines 11 to 17; page 5, lines 1 to 23; page 9 lines 9 to 14; page 11, lines 16 to 23). When the heat source is removed, however, *"the temperature of the composite film structure 102 decreases and the sealing layer 16 regains its sealing abilities"* (page 11, lines 23 to 27). It is self-evident from this description that the sealing layer, and therefore the entire film, is necessarily impermeable. This is a key stated feature and objective of Lin's films, and modifying the films to make them permeable would never have been obvious to the skilled artisan.

In particular, at the top of page 4, Lin discloses:

***"The sealing layer keeps the gaps sealed and air impermeable and provides the air permeable composite film with water repelling abilities***

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<sup>5</sup> Lin page 5, line 22

<sup>6</sup> Lin page 5, lines 19-20

*when the differential pressure between the top face and the bottom face of the air permeable composite film is zero or approximately zero. When the differential pressure grows, the gap, acting as a ventilating perforation, becomes air and vapour permeable.*

Lin provides no examples to demonstrate whether the disclosed film actually works, or whether it works via the "valve" mechanism proposed.

Critical to the proper understanding of Lin is the fact that it is the "tiny gaps", and the "tiny gaps" alone, that provide the air permeability. Lin's own clear statements to this effect make it indisputable that there is no air-permeability in Lin's non-perforated layer and no air-permeability in the non-perforated regions of his perforated layer. Applicants note that Lin's utter silence as to film thickness, gap size and gap density, combined with his unqualified statement that his film is "impermeable", can only indicate a desire to achieve perfect impermeability. In view of that, it could never have been obvious to modify Lin's film to provide a WVTR of at least 60 g/m<sup>2</sup>/day as achieved by Applicants' invention, where even the unperforated barrier layer is permeable.

Thus, the stated objectives of Lin's invention put his films in direct contrast to Applicants' films, which provide a thin and gas-permeable unperforated barrier layer in combination with a perforated substrate to provide (i) barrier properties, (ii) breathability, and (iii) mechanical strength, in a single film. Because Lin does not teach the recited film characteristics, and because there is no reason of record why the skilled artisan would have modified Lin's films to provide them, the rejections of all of the claims should be withdrawn.

Point 46 of the office action states that hindsight reconstruction of a claim is proper as long as it does not include knowledge gleaned from Applicants' disclosure. Yet only Applicants' disclosure provides knowledge leading to the claimed thickness, perforation and WVTR values. These values cannot be derived from Lin's disclosure, in view of 1) his total silence on these parameters, and 2) his implicit satisfaction with a film having zero permeability.

At point 47, the office action alleges that Applicants have not provided data to show that the unexpected results (presumably referring to the good permeability of Applicants' invention, as opposed to the desired and stated impermeability of Lin's) occur over the entire claimed range of "no more than 12  $\mu$ m". Applicants respectfully submit that the recited 12  $\mu$ m has been unambiguously established as an upper limit, and that making the layer thinner can only further increase permeability, thus distancing Applicants' films even

further from Lin's. Thus, the objective evidence of nonobviousness is commensurate in scope with the claims.

Applicants also note that the relevance of the Declaration referred to at point 47 is not limited to differentiating their invention from that of Akao, and that the Declaration has legitimate utility for all that it teaches in any context.

Claims 11 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Rogers (US 4,918,156).

Claims 16, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Dominguez De Walter et al. (US 6,787,630).

Claims 17, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of McConnell et al. (US 4,450,250).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Harrington (US 4,172,824).

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Wang et al. (6,143,818).

Claims 31, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Zobel (US 5,832,699).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (WO 01/92000) in view of Varriano-Martson (US 6,441,340).

All of the above rejections rely on Lin as described above, and Applicants submit that all of these rejections should be withdrawn for the reasons previously discussed.

Conclusion

Applicants submit that the rejections have been overcome, and respectfully request entry of the amendments, reconsideration and early notice of allowance. Applicants invite the Examiner to contact their undersigned representative, Frank Tise, if it appears that this may expedite examination.

Respectfully submitted,



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